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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,879	03/18/2004	Savine Bockel-Macal	000348-309	5190

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EXAMINER	
SODERQUIST, ARLEN	
ART UNIT	**PAPER NUMBER**
1743	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,879	BOCKEL-MACAL ET AL.	
	Examiner	Art Unit	
	Arlen Soderquist	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 35-42 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 35-42 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 18 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/759,265.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3-18-04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The disclosure is objected to because of the following informalities: the status of the parent application should be updated.

Appropriate correction is required.

2. Claims 35-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 35 it is not clear if the claim is limited further than mixing three gases together in a manner that combustion or spontaneous ignition does not occur. For examination purposes, the claim will be treated with this scope since the claim appears to cover mixing of three gases together in a manner that the mixing never crosses a flammability region of the ternary diagram. Claim 36 has the problem of claim 42. In claims 46-48 and 51-53, it appears that the claims are not properly dependent upon claim 35 since there does not appear to be an actual mixing that occurs in claim 35. It is not clear if claim 59 further limits claim 55 since all elements of claim 59 appear to be present in claim 55. In claims 36 and 40, the structure presented is insufficient to perform the intended process. The claim preambles set forth that the apparatus is one in which a risk of flammability of the mixture is established, yet the elements do not positively recite sufficient structure to directly determine the risk of flammability from the elements which are claimed. In other words there is not means to take the ternary diagram and/or the chemical induction times that are computed in claim 40 and determine the risk of flammability. A similar statement is appropriate for claim 36.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 35 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yoshikawa. In the paper and abstract Yoshikawa discusses an expert system for prediction of safety in manufacture of a mixture of gases. Physical and chemical properties of many gases were stored in a computer as a database for the expert system. The system first checks the concentration of each gas to be mixed. If it is beyond the safety limit, the manufacture of the mixture is rejected. The reactivity of each gas is checked and if any of the gases react with each other, the gas

mixture can be manufactured and a message is displayed. The explosion limit of the mixture is examined. The system also provides the order of addition of gases to a container, method of analysis, and pressure of the mixed gases.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa as applied to claim 35 above, and further in view of Clark. Figures 9-13 of Yoshikawa show displays that appear to have ternary like diagrams on them however, due to the paper being in Japanese, it is not currently possible to determine if Yoshikawa teaches that ternary diagrams are used in the process.

In the paper Clark discusses process vent collection system safety. To ensure process vent collection system (VCS) safety, proper design and operation begins with considering the system as a unit operation and giving it the same weight as a piece of process equipment. Due to the interconnective nature of VCS, hazards initiated in them can potentially affect >1 unit operation. Administrative, design, and operational recommendations are made to adequately deal with the safety issues such systems present. Topics discussed include: VCS design recommendations; process hazards analysis (ownership and responsibility, process hazards review [PHR], hazards identification, hazards and operability analysis, consequence analysis, change management); understanding flammability (fire triangle, estimating flammability limits, temperature and pressure effects, mists and dusts, flammability diagrams, ignition sources); VCS

hazards, reactions, and safety (explosion and flashback, internal and external, exothermic reactions and reactive chemicals); required operating modes (lean operation; inerted operation; interlocks, alarms, and control systems; mixing of streams; using monitors to determine composition, flow-ratio control; flammable sources; arrestor use); recommendations summary; and system-component design considerations (piping, relief-valve discharge, pressure drop, isolation or block valves, low-point drains and knockout pots, arrestors and liquid seals, thermal variation considerations, O and hydrocarbon monitors). Particularly relevant to the instant claims is the discussion relative to understanding flammability starting on page 68. Pages 69-70 show several ternary flammability diagrams and describe how they can be used to determine when or if a mixing process in the VCS enters or crosses the flammability region of the diagrams.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the ternary flammability diagrams taught by Clark into the expert computer process of Yoshikawa because as shown by Clark they clearly show how the mixing process can show when flammable compositions can be produced during the mixing process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is 571-272-1265. The examiner can normally be reached on Mon-Thu and Alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arlen Soderquist

March 21, 2005

ARLEN SODERQUIST
PRIMARY EXAMINER